

# Notice of Allowability

Application No.

10/008,952

Examiner

Jason Mitchell

Applicant(s)

WISE, ASHLEY K.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an Appeal Brief filed 9/21/06.
2. ☒ The allowed claim(s) is/are 1-4, 6, and 9-20 renumbered (1-17).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

*MENG T. AN*  
**SUPERVISORY PATENT EXAMINER**  
COMMUNICATION CENTER

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Mr. LeRoy Maunu, registration # 35274 on 12/28/06.

3. The following claims have been amended as follows:

1. (Amended) A computer-implemented method for processing numerical values in a computer program executable on a computer system, comprising:

encapsulating in a large-integer datatype, large-integer data and associated large-integer operators, wherein the large-integer data has runtime expandable precision and maximum precision is limited only by system memory availability;

overloading language-provided arithmetic, logical, and type conversion operators with the large-integer operators that operate on large-integer variables in combination with other datatypes, and programmed usage of a variable of the large- integer datatype is equivalent to and interoperable with a variable of a system- defined integral datatype;

establishing a plurality of available storage nodes available for allocation to large-integer data;

allocating a subset of the plurality of available storage nodes for a large-integer variable, determining a number of storage nodes to be allocated as a function of a size of the large-integer variable~~the subset being an allocated plurality of storage nodes~~, and storing in each node of the subset a subset of bit values that represent a numerical value in the allocated plurality of storage nodes and forming a linked list of the allocated plurality of storage nodes;

determining a total number of available storage nodes available for allocation to large-integer data; allocating memory for a first number of available storage nodes, responsive to the total number being less than first threshold value, and establishing the first number of available storage nodes; and

removing from the plurality of available storage nodes, responsive to the total number being greater than a second threshold value, a second number of storage nodes, and deallocating memory for the second number of storage nodes.

7-8. (Canceled)

9. The method of claim 81, further comprising:

maintaining a set of available storage nodes that are not allocated to any large-integer variable;

allocating a storage node from the set of available storage nodes to a large-integer variable while performing a large-integer operation that generates a numerical value and stores the numerical value in the variable, if a number of bit values required

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to represent the numerical value exceeds storage available in storage nodes allocated to the large-integer variable; and

returning to the set of available storage nodes a storage node allocated to a large-integer variable while performing a large-integer operation that generates a numerical value for storage in the variable, if a number of bit values required to represent the numerical value is less than storage available in storage nodes allocated to the variable.

18. An apparatus for processing numerical values in a computer program executable on a computer system, comprising:

means for encapsulating in a large-integer datatype, large-integer data and associated large-integer operators, wherein the large-integer data has runtime expandable precision and maximum precision is limited only by system memory availability;

means for overloading language-provided arithmetic, logical, and type conversion operators for integers with the large-integer datatype operators that operate on large-integer variables in combination with other datatypes, and programmed usage of a variable of the large-integer datatype is equivalent to and interoperable with a variable of a system-defined integral datatype;

means for establishing a plurality of allocable storage nodes available for allocation to large-integer data;

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means for allocating, for a large-integer variable, a subset of the plurality of allocable storage nodes, determining a number of storage nodes to be allocated as a function of a size of the large-integer variable~~the subset becoming an allocated plurality of storage nodes for the large-integer variable;~~ and

means for storing in each node of the subset a subset of bit values that represent a numerical value in the allocated plurality of storage nodes and forming a linked list of the allocated plurality of storage nodes

means for determining a total number of available storage nodes available for allocation to large-integer data;

means for allocating memory for a first number of available storage nodes, responsive to the total number being less than first threshold value, and establishing the first number of available storage nodes; and

means for removing from the plurality of available storage nodes, responsive to the total number being greater than a second threshold value, a second number of storage nodes, and deallocating memory fro the second number of storage nodes.

21. (Canceled)

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Mitchell whose telephone number is (571) 272-

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3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jason Mitchell  
12/28/06



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